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Abstract

J.E.N. STUDIES ON THE HEAVY WATER PRODUCTION BY ELECTROLYSIS AND ISOTOPIC EXCHANGE REACTION

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The studies carried out by the J.E.N. on the heavy water production by electrolysis and isotopic exchange in order to utilize the facilities of a water electrolysis plant owned by the fertilizer company E.I.A.S.A. are described.

The studies were developed in the following stages: 1º) Theoretical study of the ideal cascade with electrolysers and reactors for the isotopic exchange reaction H_2O/H_2 utilizing as feed water vapor with a deuterium concentration as in Nature. 2º) Theoretical study of square cascades by means of a computer UCT - UNIVAC. 3º) Project, commissioning and starting up of the modification of the industrial electrolysis plant. 4º) Project, commissioning and starting up of the electrolysis and burner pilot plant and of the rectification pilot plant to enrich the product of the industrial plant. 5º) Analytical methods of control for all the ranges of concentration of the industrial and the pilot plants.

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